

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P04E7037PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/KR2004/002654	International filing date(<i>day/month/year</i>) 15 OCTOBER 2004 (15.10.2004)	Priority date (<i>day/month/year</i>) 16 OCTOBER 2003 (16.10.2003)
International Patent Classification (IPC) or national classification and IPC H01Q 13/08(2006.01)i		
Applicant ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
 - ☒ Box No. I Basis of the report
 - ☐ Box No. II Priority
 - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Box No. IV Lack of unity of invention
 - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Box No. VI Certain documents cited
 - ☐ Box No. VII Certain defects in the international application
 - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 28 APRIL 2005 (28.04.2005)	Date of completion of this report 03 FEBRUARY 2006 (03.02.2006)
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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002654

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
 - ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
 - ☒ the international application as originally filed/furnished

 - ☐ the description:
 - pages _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____

 - ☐ the claims:
 - pages _____ as originally filed/furnished
 - pages* _____ as amended (together with any statement) under Article 19
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____

 - ☐ the drawings:
 - pages _____ as originally filed/furnished
 - pages* _____ received by this Authority on _____
 - pages* _____ received by this Authority on _____

 - ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2004/002654

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-5	YES
	Claims	None	NO
Inventive step (IS)	Claims	2-5	YES
	Claims	1	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims	None	NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents :

D1 : US 2003/0038750 A1 (2003.2.27)

D2 : JP 2003092510 A (2003.3.28)

The present invention is related to indented planar inverted F-type antenna. And key idea of claim 1 is that the first radiation patch is asymmetrical shape of linearly tapered rectangle and has one and more corrugated hollows.

D1 describes indented planar inverted F-type antenna. In details, we can see a flat metal plate(22) of crenellated shape to reduce the antenna size in figure 2. But metal plate(22) of D1 is not an asymmetrical shape of linearly tapered.

D2 is related to plate-shaped inverted F-type antenna and radio communication equipment. In figures 11~12 of D2, an ordinary inverted F type antenna(1) has a taper-notched conductor(61a) and a cutting pattern(16). And a cutting pattern(16) is not more than one.

However, claim 1 of this invention lacks an inventive step under PCT article 33(3) as being anticipated by D1 and D2. Therefore, claims 1 would have been obvious to a person skilled in the arts of waveguide system at the time of invention by above documents.

2. Industrial applicability

Claims 1-5 meet the criteria of PCT Article 33(4) because it can be used in mobile communication industry.